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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/743,859	06/11/2001	Richard R Schrock	M0925/7069	2196

7590 05/27/2003
Timothy J Oyer
600 Atlantic Avenue
Boston, MA 02210

EXAMINER

TESKIN, FRED M

ART UNIT	PAPER NUMBER
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1713

DATE MAILED: 05/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.
09/743,859

Applicant(s)
Schrock, et al.

Examiner
Fred Teskin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three (3) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-7, and 9-90 is/are pending in the application.
- 4a) Of the above, claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, and 9-90 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____ | 6) <input type="checkbox"/> Other: |

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1. The preliminary amendment of 11 June 2001 has been entered. Claims 1, 3-7 and 9-90 are currently pending and under examination.

2. Receipt is acknowledged of papers submitted under 35 U.S.C. § 371, which papers have been placed of record in the file.

3. The references cited in the Search Report of 19 November 1999 have been considered, but will not be listed on any patent resulting from this application because they were not provided on a separate list in compliance with 37 CFR 1.98(a)(1). In order to have the references printed on such resulting patent, a separate listing, preferably on a PTO-1449 form, must be filed within the set period for reply to this Office action.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the lack of antecedent basis for the phrase "relative to the amount of substrate" in claims 9-11 (cf., specification page 18, line 21) and for selection of "i-Pr" as R³ in claim 86.

5. Claims 12, 15, 18-39, 56, 77, 80, 84, 85 and 88 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

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failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. More specifically, the following grounds for indefiniteness apply to the indicated claims.

(A) Claims 12, 15 and 18-39 are indefinite as technically inaccurate in the expressions " C_1 - C_{20} alkenyl", " C_1 - C_{20} aryl" and " C_1 - C_{20} alkynyl", recited in each of said claims. It is not seen how an alkenyl or alkynyl group can contain less than 2 carbon atoms or how a hydrocarbyl radical with as few as 1-4 carbon atoms can qualify as aromatic, hence an "aryl" group. Clarification, as by identification of C_1 alkenyl and alkynyl groups and of C_1 - C_4 aryl groups, and/or appropriate correction is required.

(B) Claim 56 improperly depends from a cancelled claim (claim 2).

(C) Claim 77 is incomplete, hence indefinite, due to lack of definition for the variable R^2 appearing in the recited chemical structure.

(D) Claim 84 is incomplete, hence indefinite, due to lack of definition for the variables M, R^1 and R^2 appearing the recited chemical structure.

(E) Claim 80 is rendered vague and indefinite by the expression "olefin group associated with a ring structure". It is not clear from the antecedent disclosure what "associated" is

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intended to cover in terms of modes of attachment to the ring structure; e.g., what kind of linkage(s) besides covalent or ionic bonding is intended to qualify as "associated".

(F) Claim 85 and 88 are indefinite as of indeterminate scope in the expression "substituted derivatives thereof". It is not seen wherein the specification provides any definition, examples or guidelines as to which of the vast array of possible substituents are suitable for the intended purpose, i.e., for providing a catalyst suitable in the claimed method. What chemical variants of the earlier recited entities are intended to qualify as "substituted derivatives" in the context of the claimed invention? Clarification and/or appropriate correction is required.

6. The following non-statutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the right to exclude granted by a patent. In re Sarett, 327 F.2d 1005, 140 USPQ 474 (CCPA 1964); In re Schneller, 397 F.2d 350, 158 USPQ 210 (CCPA 1968); In re White, 405 F.2d 904, 160 USPQ 644 (CCPA 1969); In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); In re Van Ornam, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Longi, 759 F.2d 887, 225 USPQ

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645 (Fed. Cir. 1985); and In re Goodman, 29 USPQ2d 2010 (Fed. Cir. 1993).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(b) and (c) may be used to overcome an actual or provisional rejection based on a non-statutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.78(d).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1, 3-7, 9-76 and 78-90 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-70 of U.S. Patent No. 6,346,652 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because they differ merely in matters of scope and/or semantics. Indeed, the conflicting claims are drawn to the same basic invention, i.e., a method of desymmetrization of a molecular substrate having a plane of symmetry, and the patent claims define a catalyst that represents a subgenus of the catalyst used in the method generically claimed herein. Absent a proper terminal disclaimer, the subgeneric or

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species claims preclude issuance of the generic application claims.

Cf. In re Van Ornam, supra.

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1, 3-7, 9, 10, 34, 56-58 and 61-65 are rejected under 35 U.S.C. § 102(a) as being anticipated by Fujimura et al, "Asymmetric Ring-Closing Metathesis Catalyzed by Chiral Molybdenum Alkylidene Complexes", *J. Org. Chem.* 1998, 63, 824-832 ("Fujimura").

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Fujimura discloses a method for ring-closing metathesis of an olefin containing a plane of symmetry. The method yields a product free of a plane of symmetry. Further, the method utilizes a dialkoxide catalyst as claimed in amounts within the claimed ranges (e.g., 2.0 mole %; see the equation under the heading "Table 5" on page 829). The olefin may be achiral and acyclic, and the product may contain a ring having less than 10 carbon atoms. (See the entire document.)

11. Claims 11-33, 40-55, 59, 60, 67-77 are rejected under 35 U.S.C. § 103(a) as unpatentable over Fujimura et al, "Asymmetric Ring-Closing Metathesis Catalyzed by Chiral Molybdenum Alkylidene Complexes", *J. Org. Chem.* 1998, 63, 824-832 ("Fujimura").

As noted above, Fujimura discloses a method for ring-closing metathesis of an olefin containing a plane of symmetry. The product resulting from the method is free of a plane of symmetry. The process utilizes a dialkoxide catalyst as claimed. The olefin may be achiral and acyclic, and the product may contain a ring having less than 10 carbon atoms. (See the entire document.)

Fujimura does not disclose substrate 8 of Table 2. It also does not disclose the product characteristics of claims 40-55 and 67-76 or the catalyst characteristics of claims 59, 60 and 77.

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Nevertheless, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method disclosed by Fujimura by utilizing substrate 6 of Table 2 because this substrate is chemically similar to those substrates disclosed by Fujimura and therefore would be expected to behave similarly in the Fujimura method to the disclosed substrates.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method disclosed by Fujimura by producing products as claimed because one having ordinary skill in the art would be expected to adjust conditions to obtain the desired product. Fujimura suggests that adjusting conditions will affect conversion. See Table 1.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method disclosed by Fujimura by utilizing the claimed catalysts because they are chemically and structurally similar to those disclosed by Fujimura and therefore would be expected to be effective in the disclosed process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the method disclosed by Fujimura by utilizing the claimed amount of the

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catalysts because one so skilled would expectedly use the amount that results in the desired conversion level.


12. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure.

The prior art citations not relied upon are considered pertinent in their disclosure of metathesis catalysts and processes.

13. Any inquiry concerning this communication should be directed to Examiner F. M. Teskin whose telephone number is (703) 308-2456.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached on (703) 308-2450. The appropriate fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 (non-after finals) and (703) 872-9311 (after-finals).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.


FRED TESKIN
PRIMARY EXAMINER
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FMTeskin/04-04-03